

Remarks:

Applicant has carefully studied the final Examiner's Action mailed 12/11/2008, having a shortened statutory period for response set to expire 03/11/2009, and all references cited therein. The amendment appearing above and these explanatory remarks are believed to be fully responsive to the Action. Accordingly, this important patent application is now believed to be in condition for allowance.

Applicant responds to the outstanding Action by centered headings and numbered paragraphs that correspond to the centered headings and paragraphing employed by the Office, to ensure full response on the merits to each finding of the Office.

Claim Rejections – 35 USC § 103

1. Applicant acknowledges the quotation of 35 U.S.C. 103(a).
2. Claims 1, 6, 18-27, 30-33 and 36 stand rejected under 35 U.S.C. § 103(a) as being anticipated by Rees. Reconsideration and withdrawal of this ground of rejection is requested.

The Office points out that the following argument made by Applicant in Amendment E was not expressly reflected in the claim language:

There is no disclosure whatever of an outgoing modulated laser beam at a first fixed position that is reflected off trees or the like at a remote second fixed position in line-of-sight relation to the first fixed position toward a third fixed position that is in line-of-sight relation to the second fixed position but not in line-of sight relation to the first fixed position.

Applicant thanks the Office for this astute observation. Independent claims 1, 6, 18, and 20, as currently amended, now expressly recite the three respective fixed positions of the critical elements of the invention to support the respective "whereby" clauses of said claims that recite the resultant "V"-shaped path of travel for a laser beam. This places said four independent claims and their respective dependent claims into condition for allowance

Response to Arguments

3. Applicant thanks the Office for fully considering the arguments filed 05/28/2008 and for pointing out the need to amend the independent claims to expressly recite the respective first, second, and third fixed positions of the three major elements of the invention.

Applicant respectfully traverses the Office's characterization of the Rees CCD as suggesting multiple telescope receivers. The pixels of a CCD are sensitive to light but said pixels

do not perform the function of a telescope nor would one of ordinary skill in the art of lasers think of CCD pixels as performing telescopic functions.

Applicant further thanks the Office for pointing out that independent claim 20 is further deficient for failing to make it clear that the transmitting and receiving telescopes are two separate and distinct telescopes. As amended, claim 20 expressly recites that said telescopes are respectively disposed at first and third positions and that said positions are remote from one another and not in line-of-sight relation to one another.

Applicant respectfully traverses the Office's finding that atmospheric particles can serve as obstacles that prevent line of sight communication because, as the Office argues, light can be reflected from an atmospheric particle as distinguished from being directly transmitted through such a particle. However, Applicant observes that a laser beam travels through the atmosphere as if it is being directly transmitted through whatever particles are in the air, there being no apparent obstacle presented by atmospheric particles. More particularly, light may be both simultaneously transmitted and backscattered from the atmosphere, with an appropriate attenuation coefficient and a backscatter coefficient, which depends upon the wavelength of the light and the characteristics of the atmosphere. For example, in the near-IR, the transmission of the atmosphere (ground level) is about 95% for a 1 km path, and the backscatter from the atmospheric aerosols (US Standard Atmosphere) produces an effective target reflectivity of about 0.001% for a range resolved aerosol length of about 10m. The target reflectivity of a hard target (such as a tree or building) is about 10% to 40%. However, such weak backscatter from the atmosphere is easily seen by a lidar system and has been used to measure clouds and stratospheric aerosols at distances of up to 40 km. A target reflectivity of 0.001% does not support the Office's finding that atmospheric particles represent an obstacle that prevents line of sight communication.

Applicant also respectfully traverses the Office's finding that internal mirror 70 of Rees is an obstacle of the type that would have suggested the obstacle recited in Applicant's independent claims. Said claims include the limitation "remote" which is easily understood to include rather long distances in view of the claim recital of buildings, clouds, and the like. The internal components of the Rees device cannot be considered as "remote" from one another so mirror 70 would not have suggested a remote obstacle as recited in Applicant's claims.

Moreover, a mirror such as mirror 70 is a well-known light-reflecting device. Use of an internally mounted mirror in an instrument for its intended purpose would not have suggested Applicant's use of trees, clouds, and the like.

Conclusion

4. Applicant acknowledges that the outstanding action is a final action. A Request For Continued Examination and fee are filed herewith as a separate paper. Claims 1, 6, 18-27, 30-33, and 36 are now in condition for allowance and A Notice of Allowance is solicited. If the Office is not fully persuaded as to the merits of Applicant's position, or if an Examiner's Amendment would place the pending claims in condition for allowance, a telephone call to the undersigned at (813) 925-8505 is requested. Applicant thanks the Office for its continuing careful examination of this important patent application.

Very respectfully,

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CERTIFICATE OF ELECTRONIC TRANSMISSION

(37 C.F.R. 2.190(b))

I HEREBY CERTIFY that this Amendment F, including Introductory Comments, Amendments to the Claims, and Remarks, is being electronically transmitted to the United States Patent and Trademark Office through EFS Web on February 3, 2009.

Dated: February 3, 2009

/jessica powell/

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